

**REMARKS**

This amendment is in response to the non-final Office Action dated October 27, 2004. Reconsideration of the present application in view of the following remarks is respectfully requested.

**I. Status of the Claims:**

Claims 1-24 are currently pending and at issue in the application. By this amendment, claims 1-19, and 21-24 have been amended, claim 20 has been canceled and new claims 25-29 have been added. Therefore, upon entry of this amendment, claims 1-19 and 25-29 will be pending and at issue.

Claim 1 has been amended to specify that the total concentration of oxygen is in the range from 1 to 10% of the total mixture. Support for the amendment is found in the specification, for example, at page 4, lines 9-10 and in original claim 20. Claim 1 has also been amended to provide proper antecedent basis for certain claim terms and to more distinctly set forth the claimed subject matter. No new matter has been introduced by way of these amendments.

Claims 2-19 and 21-24 have been amended to place the claims in condition for allowance. Claims 2-19 and 21-24 have been amended to provide proper antecedent basis for certain claim terms, to place certain groups in proper Markush format, and to further clarify what is intrinsic in the claims. No new matter has been introduced by way of these amendments.

Claim 20 has been cancelled without prejudice or disclaimer.

New claims 25-29 have been added. Support for new claim 25 is found, for example in original claim 4. Support for new claim 26 is found, for example in original claim 5. Support for new claim 27 is found, for example in original claim 6. Support for new claim 28 is found, for example in original claim 13. Support for new claim 29 is found, for example in original claim 14. No new matter has been introduced by way of these amendments.

## **II. Claim Rejections:**

### **(a) Anticipation under 35 U.S.C. §102**

The Examiner has rejected claims 1, 3, 7-10, 15-19, and 22-23 as anticipated by Borgaonkar et al., (1984) *Ind. Eng. Prod. Res. Dev.* 23:455-458 ("Borganokar"). Applicants' respectfully traverse the rejection and request reconsideration.

Without conceding the correctness of the Examiner's rejection, claim 1 has been amended to recite that the process is carried out in the presence of diluted oxygen, wherein the total concentration of oxygen is in the range from 1 to 10% of the total mixture. Borganokar does not teach carrying out the oxidation reaction in a mixture having a concentration of oxygen within the presently claimed range. Rather, Borganokar teaches carrying out the reaction in "air," which one skilled in the art would recognize to be about 21% oxygen. (Borganokar, p. 455, col. 2, para. 1.)

Because Borganokar fails to disclose each and every element of the claimed invention, applicants' submit that the rejection is overcome and respectfully request that the present rejection over Borganokar be withdrawn.

### **(b) Obviousness under 35 U.S.C. §103**

The Examiner has rejected claims 2, 20, 21 and 24 as obvious over Borganokar. The Examiner has also rejected claims 1-21 as obvious over U.S. Patent No. 6,495,726 ("Kantam") in view of Borganokar. Specifically, the Examiner maintains that both Kantam and Borganokar teach the preparation of benzaldehyde by oxidizing toluene in an organic medium in the presence of a transition metal catalyst, a bromine promoter and air. The Examiner further maintains that it would have been obvious to reduce the amount of oxygen to a total concentration of between 1% and 10% in order to achieve the desired selectivity and reaction products. The present rejections are respectfully traversed and reconsideration is requested.

For an invention to be obvious over the prior art there must be a reasonable expectation of success of combining or modifying the cited references to arrive at the claimed invention. *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25 (Fed. Cir. 2000). Neither Borganokar or Kantam suggest reducing the oxygen concentration or the reaction in the

range from 1 to 10% in order to improve selectivity and yield. Rather, the two references vary other reaction conditions (e.g., temperature, pressure, concentration of promoter) to achieve their desired results. See, e.g., Borganokar, p. 456, col. 2 and Kantam, col. 9, Table 1. Moreover, the present process yields benzaldehyde with greater selectivity (60-75% yield of benzaldehyde) and produces different by-products (benzoic acid and benzyl alcohol) at different yields (significantly lower yields of both benzoic acid and benzyl alcohol) compared to the processes of either Borganokar or Kantam. (Compare Specification Tables 1-9, pages 6-9 with Kantam, col. 9, Table 1 and Borganokar, page 456, Table II). In view of the teachings of Borganokar and Kantam, one of ordinary skill in the art would not have been motivated to reduce the concentration of oxygen in order to improve the selectivity of the reaction and increase the yield of benzaldehyde, while decreasing the yield of by-products. Absent the requisite motivation or suggest to lower the concentration of oxygen in the reaction mixture, the reference cannot support a *prima facie* case of obviousness.

The Examiner maintains that Borganokar and Kantam nonetheless render the present invention obvious, as one of ordinary skill in the art would have been motivated to provide the missing teaching (lowering the oxygen concentration) to increase the yield of benzaldehyde. The Examiner, however, has not provided any evidence in support of such a conclusion. Absent some evidentiary support for the conclusion that it would have been obvious to one of ordinary skill in the art to reduce the oxygen concentration in order to increase the yield of benzaldehyde and decrease the yield of side products, the present rejection cannot stand. *In re Zurko*, 258 F.3d 1379 (Fed. Cir. 2001) (deficiencies of references cannot be saved by appeals to “common sense” and “basic knowledge” without any evidentiary support); *see also In re Lee*, 277 F.3d 1338, 1344-1345 (Fed. Cir. 2002) (“common knowledge and common sense,” even if derived from the knowledge of Examiner or the Board, cannot substitute for evidentiary support). Therefore, in the absence of evidence that the one ordinary skill in the art would have been motivated to modify the teachings of Borganokar and Kantam, applicants respectfully request withdrawal of the present rejection.

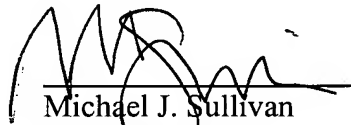
**CONCLUSIONS**

In view of the foregoing remarks and amendments, it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining, which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

Respectfully submitted,

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